



NEXTCENTURY
BUILDING LA'S WATER & POWER FUTURE

Electricity Infrastructure (AB 1318) Issues

LADWP

**Randy Howard, Director of Power System Planning &
Development**

**California Energy Commission and California Public Utilities Commission's
Joint Workshop**

July 15, 2013

Overview

Vertically-Integrated Utility

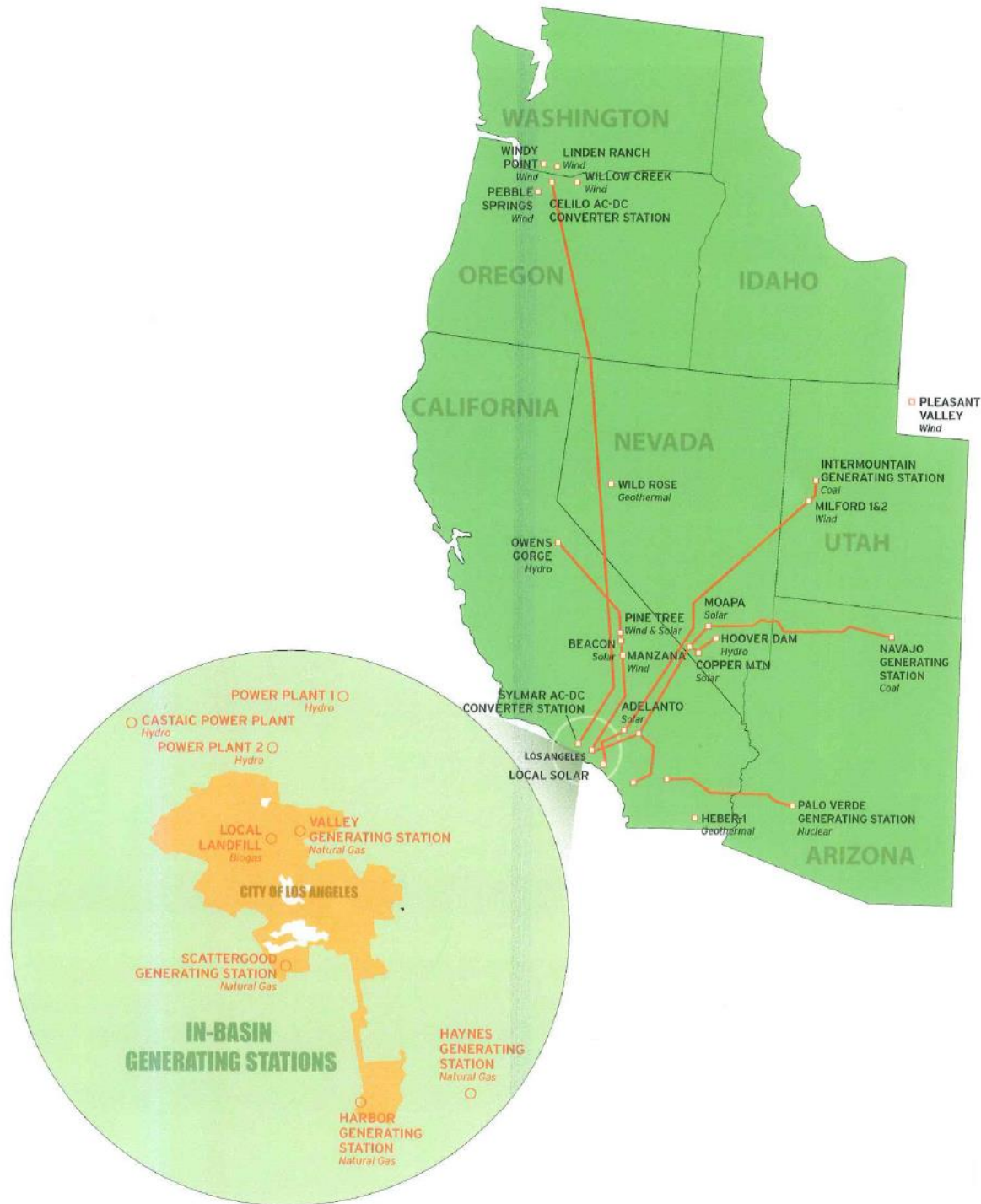
LADWP owns & operates its generation, transmission & distribution.

LA Basin : customer load center

LA Basin Generation

Four large thermal generating stations

Must import power from the western grid into the LA Basin.



Status Report on Analyses for Assembly Bill 1318

AB 1318 considers Emission Credits in the South Coast AQMD for generation required for reliability reasons.

Today, LADWP experiences shortages of generation inside the LADWP Local Reliability Area. Local Reliability Area map on next slide

During replacement of OTC units, LADWP plans to maintain the current capacity of existing units and not add any new central plant generation inside the Local Reliability Area.

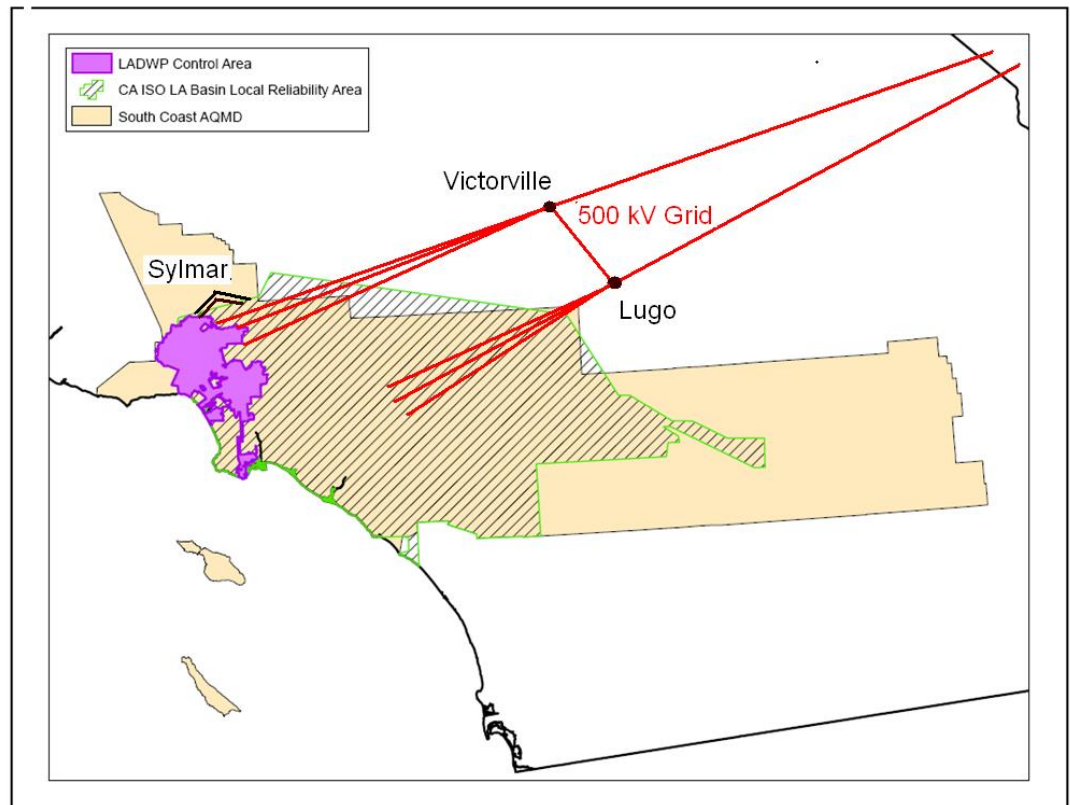
A shortfall of 130 to 360 MW in generation (inside the Local Reliability Area) is needed by 2021, depending on the demand side management assumptions.

LADWP is evaluating options to make up for the shortfall of generating capacity in the LADWP LA Basin area, including measures such as transmission upgrades, energy efficiency, demand-side management, and distributed generation programs.

Use of LADWP's LA Basin generation to replace SONGS power

Both LADWP's and SCE's LA Basin Local Reliability Areas connect to the 500 kV grid, but the 500 kV lines into the SCE area are a bottleneck.

The DWP-SCE 230kV tie at Sylmar is a high impedance path compared to the 500 kV lines, so only about 35% of the interchange happens on the 230 kV system.



Status Report on Analyses for Assembly Bill 1318

LADWP Local Reliability Area

The study finds that substantial demand reduction is needed by the year 2021 in order to remove all the reliability risk identified by Local Capacity Requirement analysis.

Demand reduction of 636 MW was studied, indicating that 2.7 MW of load reduction corresponds to 1 MW of exposure to loadshed.

An estimate of 700 to 1000 MW of demand reduction (compared to the February 2011 forecast) will be needed by the year 2021 remove reliability exposure.

Transmission upgrades remain difficult within the LA Basin, but would lower the amount of demand reduction needed.

Power Supply Transformation

Over the next 15 years, LADWP will replace over 70% of its power supply to become more sustainable and to comply with state environmental mandates.

Throughout this transformation, LADWP's top priority is maintaining power system reliability to keep the power flowing to our customers, 24/7.

Transformation

Power Supply and Demand Transformation:

- Renewable Energy
- Coal Replacement
- Rebuilding Coastal Power Plants with flexible technology
- Renewable Integration
- Demand Response
- Energy Efficiency
- Distributed Generation

Transmission and Distribution Transformation:

- Upgrade Pacific DC Intertie to deliver renewable energy to DWP and CAISO from the Pacific Northwest (upgrade to improve reliability)
- Upgrade IPP DC to deliver renewable energy to DWP and CAISO from the Utah area
- Construct Barren Ridge Transmission Project to transport renewable resources from Tehachapi Mountains and Mojave Desert areas
- Implement Local Voltage Support Program to reinforce system security
- Invest in Transmission & Distribution Reliability Program
- Smart Grid

Power Supply Transformation Elements

Achieve at Least 10% Energy Efficiency by 2020

Reach 33% Renewable Energy by 2020

Interim Target: 25% by 2016

Includes solar, wind, hydroelectric, geothermal, & biogas energy resources

Includes expanded local solar program (Solar Incentive and new Feed-in Tariff programs)

Rebuild Coastal Power Plants to Eliminate Ocean Water Cooling & to Integrate Renewables

Haynes, Scattergood & Harbor Generating Stations

Eliminate Coal from LADWP's Power Supply

Navajo Generating Station

Intermountain Power Plant

Invest in Power Reliability Program

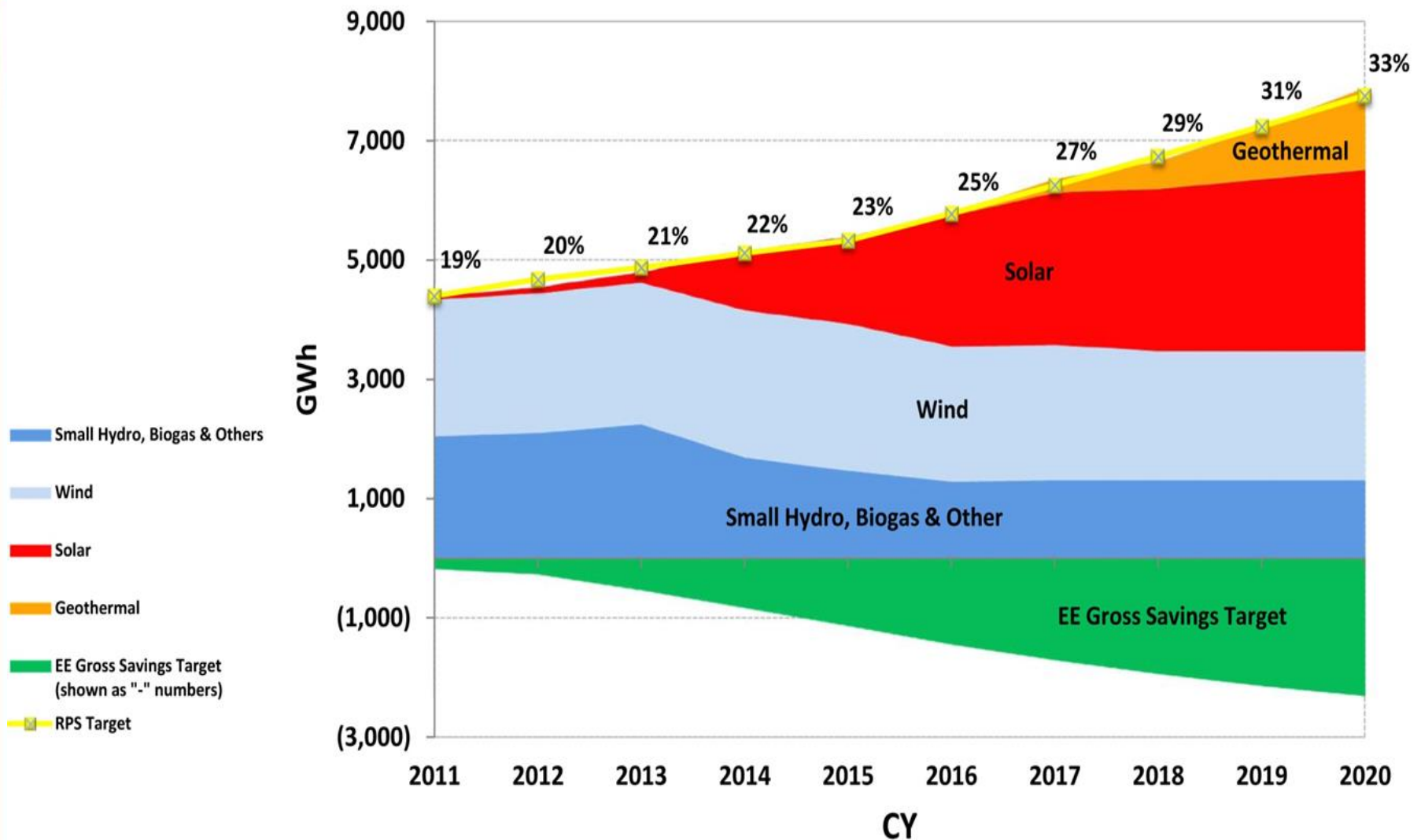
Replace aging and inadequate infrastructure

Major Accomplishments

LADWP is making progress toward meeting goals & mandates, guided by long-term Integrated Resource Planning.

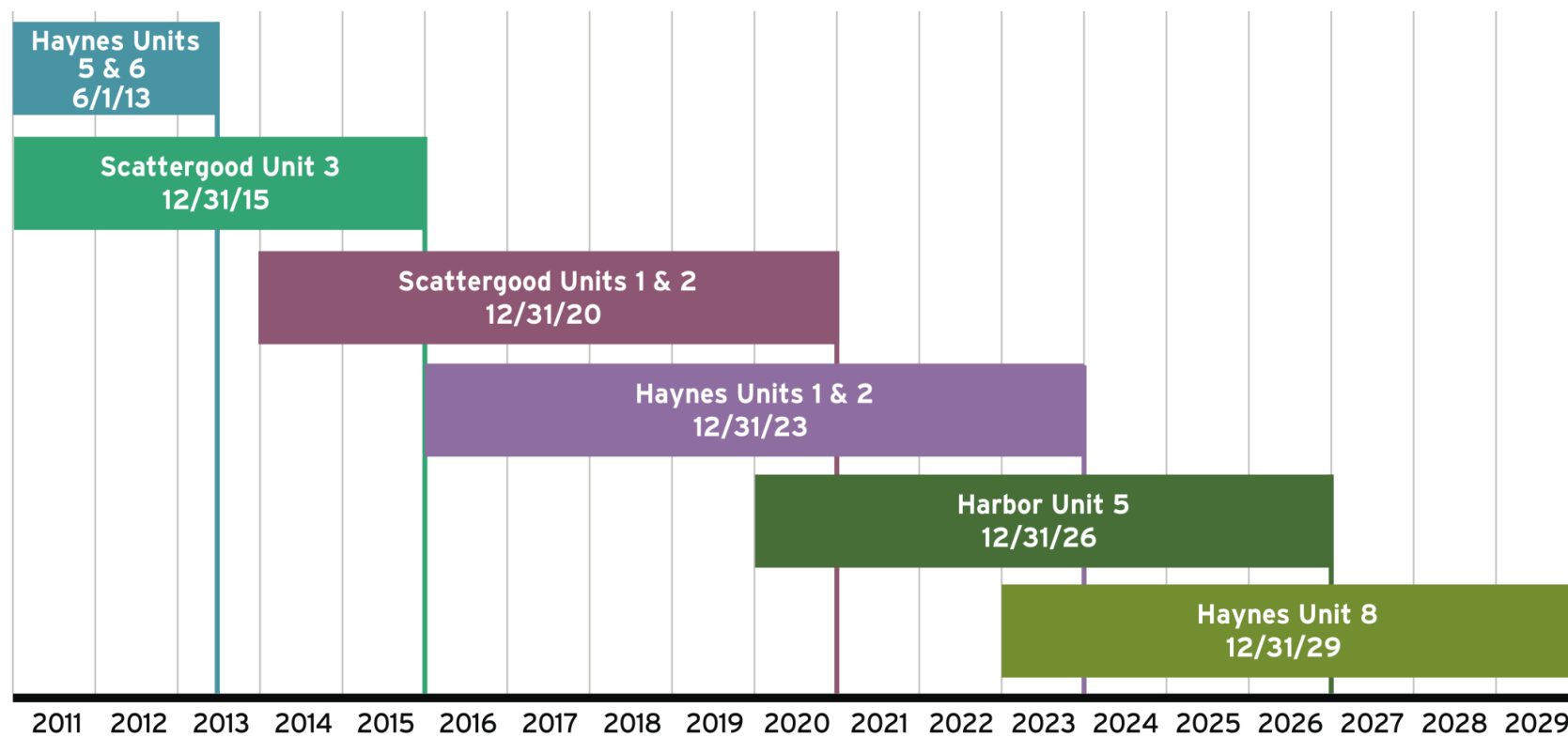
- Achieved 20% Renewables.
- Record investment in Energy Efficiency in 2012 (more than doubled budget).
- Eliminating Ocean Water Cooling at coastal power plants (Haynes 5 & 6).
- Record-level Solar Incentive Program participation. Approved installation of 100th MW of customer-installed rooftop solar in 2012.
- Approved 150 MW Feed-in Tariff Solar Program. First 100 MW starting Q1 2013. First system energized in June 2013.
- Approved largest municipal utility-scale solar developments in U.S. history; completed Adelanto and Pine Tree Solar Power Plant.
- Upgraded Interstate Transmission Lines to bring more renewables to LA.
- Reduced CO₂ Emissions to 21% below 1990 levels.

Road to 33% Renewable Energy by 2020



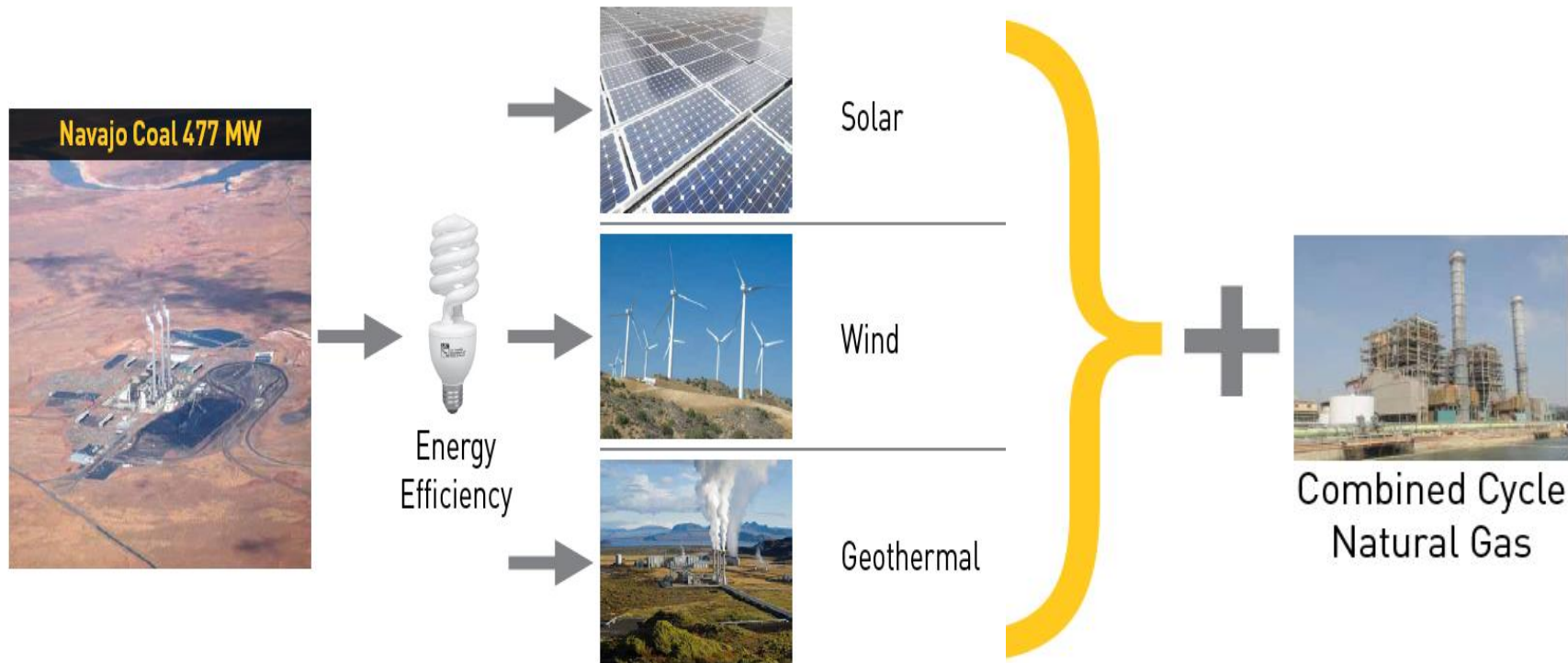
Road to Once-Through-Cooling Compliance

LADWP must replace 9 generating units at 3 Coastal Power Plants. No unit can be taken off-line until its replacement is ready.

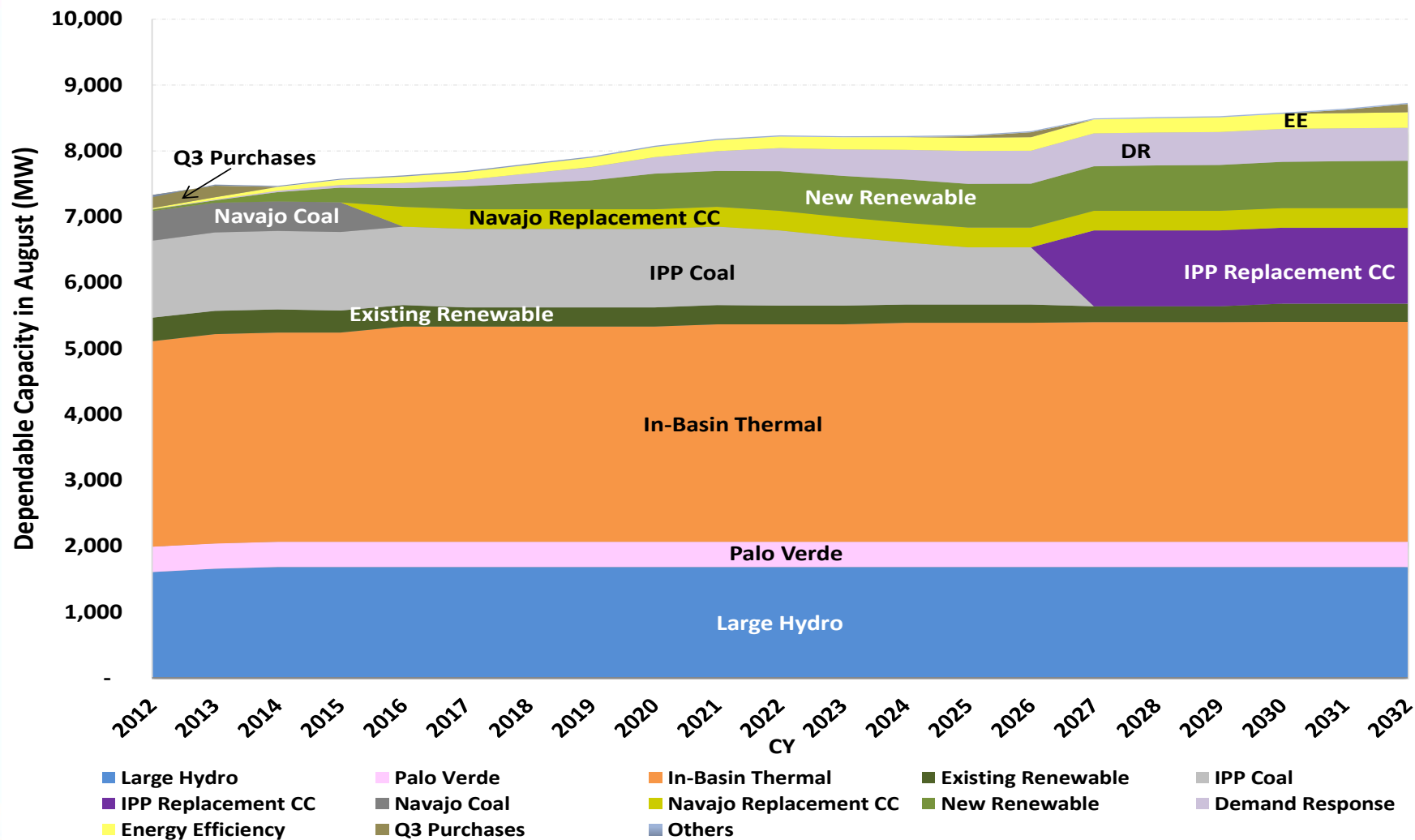


Coal Transition & Supply Integration

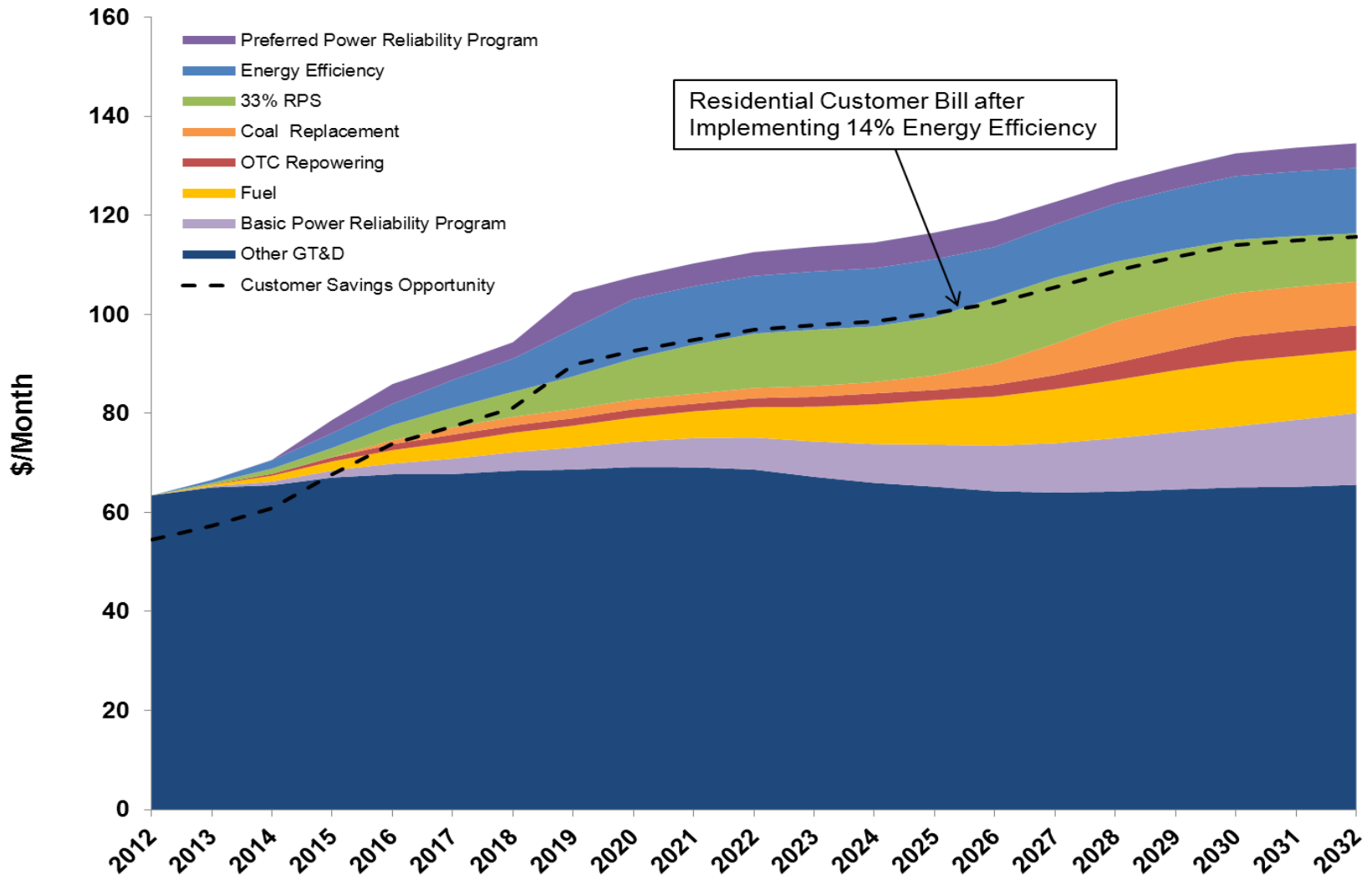
We are moving forward with eliminating coal from our energy mix. To maintain reliable energy supply without coal requires careful integration of all transformation elements.



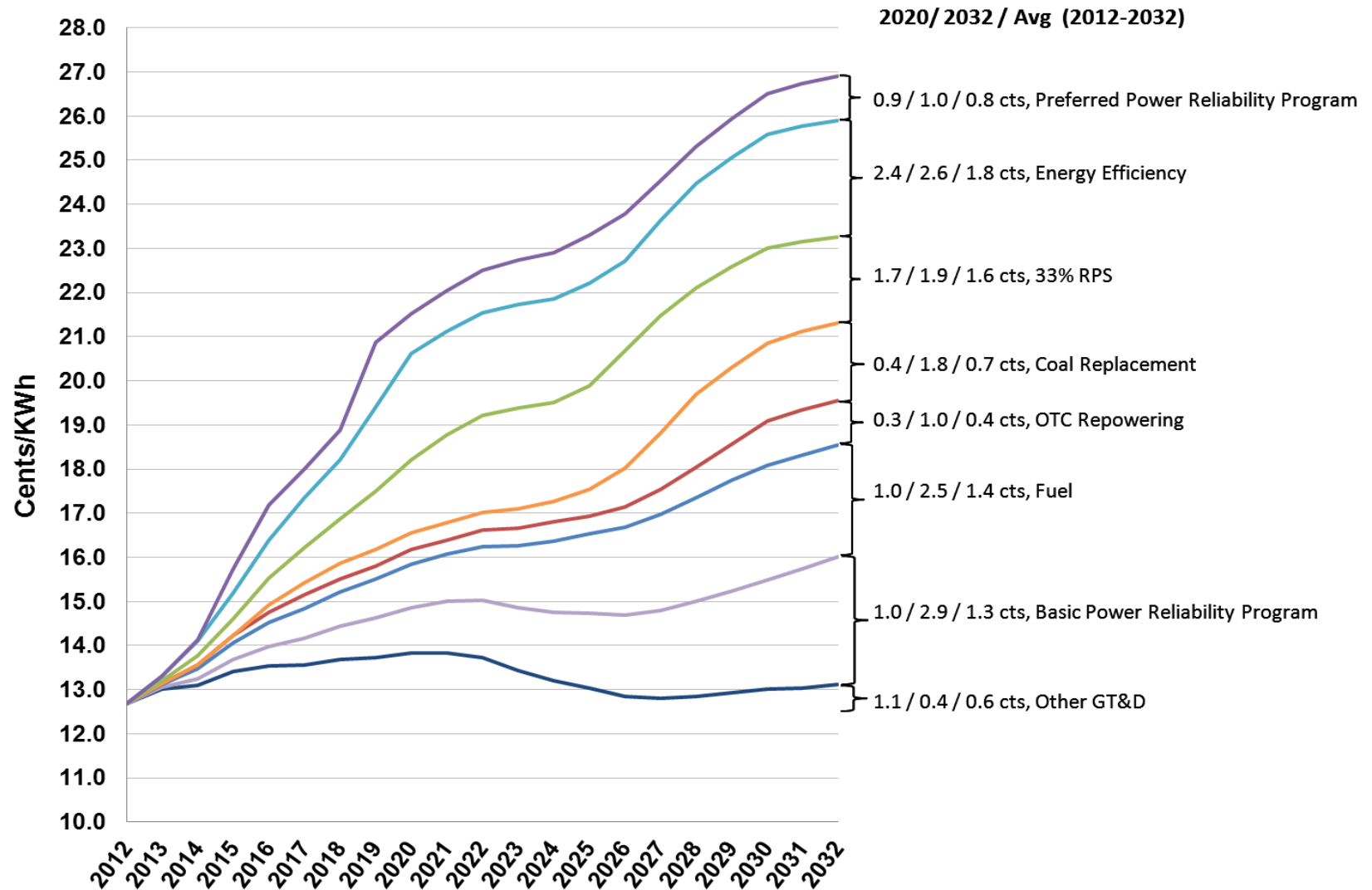
Resource Adequacy – Dependable Capacity



Residential Monthly Bill - (500 kWh/Mo. Average Usage)

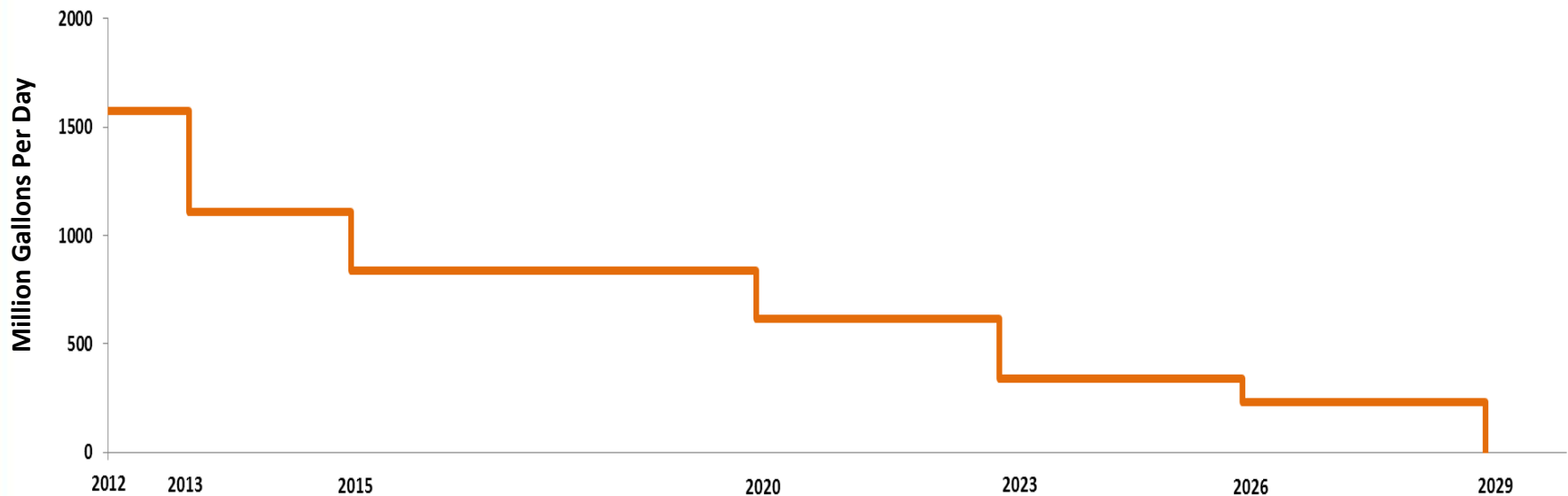


Average Retail Rate Increase Contribution



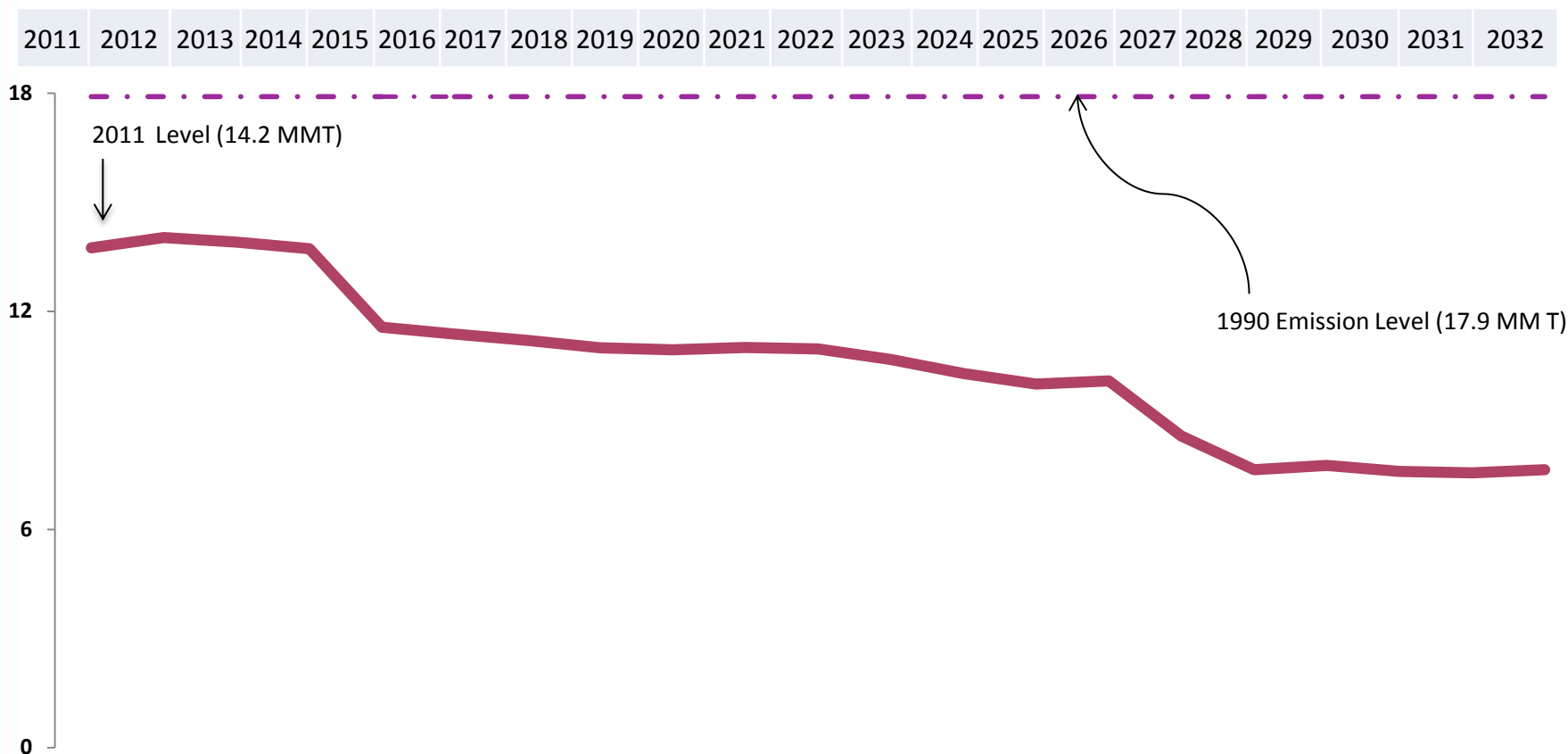
Once-Through Cooling Water Reduction Intake

Reduced Ocean Water Intake 42% Between 1990 and 2013



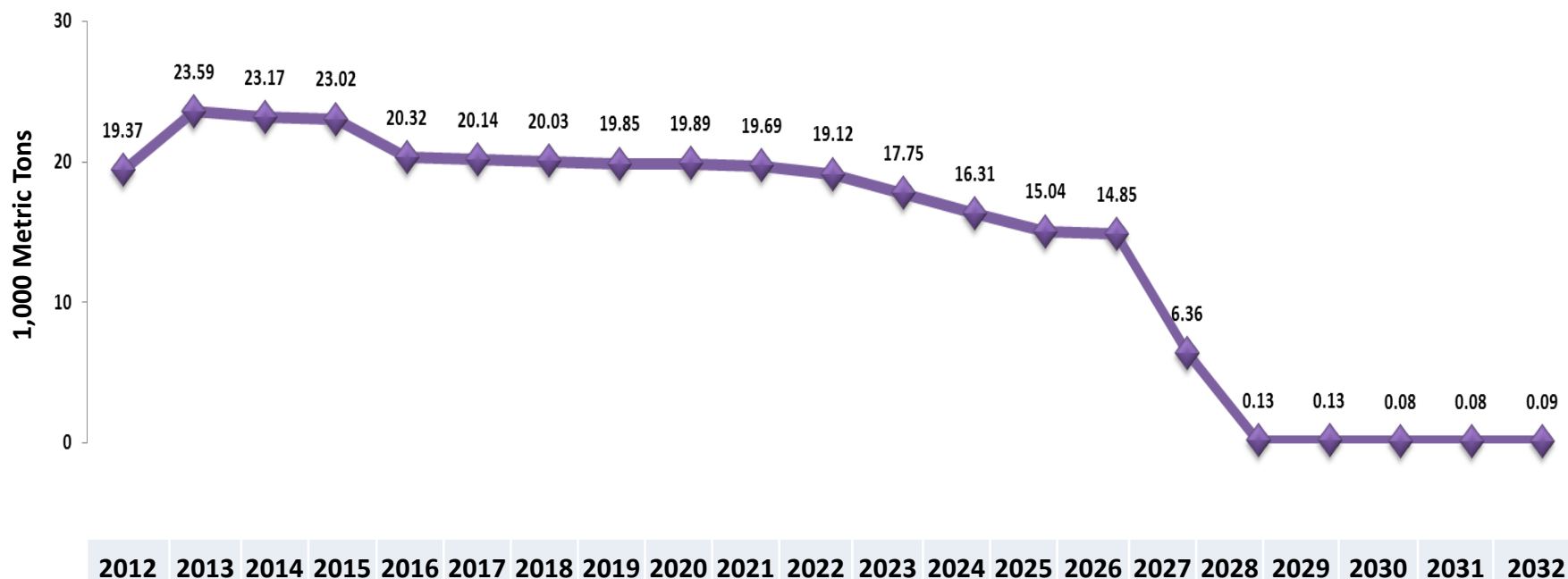
Los Angeles' Clean Energy Future

LADWP's CO₂ emissions are 21% below 1990 level, and expected to be 55% below 1990 level by 2028.



Los Angeles' Clean Energy Future (con't)

NOX emissions will decrease substantially over the next 20 years



2012 Integrated Resource Plan Overview

Questions and Discussion